

Stedman's Medical Dictionary 27th Edition

dose (dos)

1. The quantity of a drug or other remedy to be taken or applied all at one time or in fractional amounts within a given period. Cf.: dosage (2) . 2. In nuclear medicine, amount of energy absorbed per unit mass of irradiated material (absorbed *d.*). SEE ALSO: dosage (3) . [G. *dosis*1, a giving]
absorbed *d.* the amount of energy absorbed per unit mass of irradiated material at the target site; in radiation therapy, the former unit for absorbed *d.* is the rad (100 ergs/g); the current (SI) unit is the gray (1 J/kg or 100 rad). **air *d.*** SYN: exposure *d.*
bone marrow *d.* the cumulative *d.* to the blood-forming organ from therapeutic or nuclear fallout irradiation; the presumed leukemogenic *d.*
booster *d.* a *d.* given at some time after an initial *d.* to enhance the effect, said usually of antigens for the production of antibodies. **cumulative *d.*** the total *d.* resulting from repeated exposures to radiation or chemotherapy of the same part of the body or of the whole body. **curative *d.*** (CD, CD (CD⁵⁰)) 1. the quantity of any substance required to effect the cure of a disease or that will correct the manifestations of a deficiency of a particular factor in the diet; 2. effective *d.* used with therapeutically applied compounds. SEE ALSO: CD (CD⁵⁰). SYN: therapeutic *d.* **daily *d.*** the total amount of a remedy that is to be taken within 24 hours. **depth *d.*** the *d.* of radiation at a distance beneath the surface, including secondary radiation or scatter, in proportion to the *d.* at the surface. **divided *d.*** a definite fraction of a full *d.* given repeatedly at short intervals so that the full *d.* is taken within a specified period, usually one day. SYN: fractional *d.* **effective *d.*** (ED) 1. the *d.* that produces a specific effect; when followed by a subscript (generally "ED (ED₅₀)"), it denotes the *d.* having such an effect on a certain percentage (e.g., 50%) of the test animals; ED (ED₅₀) is the median effective dose; 2. in radiation protection, the sum of the equivalent *d.* in all tissues and organs of the body weighted for tissue effects of radiation. The SI unit of effective *d.* is the sievert (Sv (sievert (Sv))(=100 rem). 3. in diagnostic radiology, if a patient weighing *W* absorbs *A* joules of energy, and the experimentally derived ratio of effective dose

to energy absorbed in an anthropomorphic phantom with mass M is R , then the effective d . is $A \cdot R \cdot M/W$. This formula results in a larger value for children despite their lesser absorption of radiation. **epilation d .** the minimum amount of radiation sufficient to produce hair loss, usually in 10 to 14 days. **equianalgesic d .** the qualitative ratio between actual milligram potency of comparable analgesics required to achieve the equivalent therapeutic effect. **equivalent d .** in radiation protection, the absorbed d . averaged over a tissue or organ and weighted for the quality of the type of radiation. The unit of equivalent d . is the sievert. **erythema d .** the minimum amount of x-rays or other form of radiation sufficient to produce erythema; historically, this d . was indicated by the Sabouraud meter as the B tint, the Holzknicht as 5(5H), the Hampson as 4, and the Kienbock as 10. **exit d .** the exposure dose of radiation leaving a body opposite the portal of entry. **exposure d .** the radiation d ., expressed in roentgens, delivered at a point in free air. SYN: air d .. **fractional d .** SYN: divided d .. **gonad d .** the exposure d . to the male or female gonad, usually from incidental secondary radiation in diagnostic or therapeutic irradiation, or from whole-body irradiation. SYN: gonadal d .. **gonadal d .** SYN: gonad d .. **initial d .** SYN: loading d .. **integral d .** the total energy absorbed by the body, the product of the mass of tissue irradiated and the absorbed d . unit, the gram rad. **L d .** a group of terms that indicate the relative activity or potency of diphtheria toxin; the L d . are distinctly different from the minimal lethal d . and minimal reacting d ., inasmuch as the latter two represent the direct effects of toxin, whereas the L d . pertain to the combining power of toxin with specific antitoxin. ["L" for L. *limes*1, limit, boundary] **L⁺ d .**, **L₊ d .** alternatives for L†, the limes tod d . of diphtheria toxin, i.e., the smallest amount of toxin that, when mixed with one unit of antitoxin and injected subcutaneously into a 250-g guinea pig (guinea pig), results in death of the animal within 96 hours (based on the average in a series); on theoretical grounds, one might expect that the difference between the L₊ and L₀ d . would be identical to 1 MLD, but this is not so in actual practice; with various toxic filtrates, the difference may range from several to more than 100 MLDs, indicating

that the toxin-antitoxin combination is *not* a firm chemical union that occurs in constant proportions.

lethal *d.* (LD) the *d.* of a chemical or biologic preparation (e.g., a bacterial exotoxin or a suspension of bacteria) that is likely to cause death; it varies in relation to the type of animal and the route of administration; when followed by a subscript (generally "LD₅₀" or median lethal *d.*), it denotes the *d.* likely to cause death in a certain percentage (e.g., 50%) of the test animals; median lethal *d.* is LD₅₀, absolute lethal *d.* is LD₁₀₀, and minimal lethal *d.* is LD₀₅.

L_f *d.*, L_f *d.* the limes flocculation *d.* of diphtheria toxin, i.e., the smallest amount of toxin that, when mixed with one unit of antitoxin, yields the most rapid flocculation in the Ramon test (in vitro); in general, the L_f *d.* is slightly less than the L_r *d.*.

L_o *d.*, L_o *d.* the limes nul *d.* of diphtheria toxin, i.e., the largest amount of toxin that, when mixed with one unit of antitoxin and injected subcutaneously into a 250-g guinea pig (guinea pig), yields no recognizable reaction in the average of a series; actually, the L_o *d.* is usually recorded as the one that causes a barely perceptible local edema at the site of inoculation.

loading *d.* a comparatively large *d.* given at the beginning of treatment to start getting the effect of a drug, especially one with slow clearance thus requiring a long period to achieve stable blood levels without a high initial dose.

SYN: initial *d.*.

L_r *d.*, L_r *d.* the limes reacting *d.* of diphtheria toxin, i.e., the smallest amount of toxin that, when mixed with one unit of antitoxin and injected intracutaneously in the shaved skin of a susceptible guinea pig (guinea pig), yields a minimal, positive reaction and inflammation localized to the region of the injection; the L_r *d.* closely approximates the L_o *d.*, as would be expected, inasmuch as a slight excess of unneutralized toxin results in a reaction.

maintenance *d.* See maintenance drug *therapy*.

maximal *d.* the largest amount of a drug or physical procedure that an adult can take with safety.

maximal permissible *d.* See maximum permissible *d.*.

maximum permissible *d.* (MPD) defined by the International Commission on Radiological Protection as the greatest *d.* of radiation which, in the light of present knowledge,

is not expected to cause detectable bodily injury to persons at any time during their lifetime. This *d.* has been reduced with each Commission report. The MPD is given in terms of acute or chronic exposure of the whole body or of organs, systems, or regions of the body and differs for persons who are occupationally exposed versus the public at large. **maximum tolerated *d.*** that produces grade 3 (severe) or grade 4 (life-threatening) toxicity in 30% or fewer of the patients tested. **median effective dose (ED (ED_{50}))** See effective *d.* **minimal *d.*** the smallest amount of a drug or physical procedure that will produce a desired physiologic effect in an adult. **minimal infecting *d.* (MID)** the smallest quantity of infectious material regularly producing infection; usually expressed as ID_{50} , the quantity causing infection in 50% of a suitable series of animals or cells (cell cultures). **minimal lethal *d.* (MLD, mld)** 1. the minimal *d.* of a toxic substance or infectious agent that is lethal, as assayed in various experimental animals (e.g., the least amount of diphtheria toxin that, on an average, kills a 250-g guinea pig (guinea pig) within 96 h after subcutaneous inoculation); when followed by a subscript (generally “ MLD_{50} ”), denotes the minimal dose that is lethal to a certain percentage (e.g., 50%) of animals so assayed; 2. ID_{05} . See lethal *d.* **minimal reacting *d.* (MRD, mrd)** the minimal *d.* of a toxic substance causing a reaction, as manifested in the skin of a series of susceptible test animals; the assay is based on the development of a characteristic, minimal but definite, “standard,” focal inflammation (congestion and edema, induration, degenerative changes, and desquamation of epidermal cells). **optimum *d.*** the *d.* of a drug or radiation that will produce the desired effect with minimum likelihood of undesirable symptoms. **preventive *d.*** the smallest amount of any substance that will prevent occurrence of symptoms of a disease or the consequences of a lack of a particular factor in the diet. **sensitizing *d.*** in experimental anaphylaxis, the antigenic inoculum that renders an animal susceptible (sensitive) to anaphylactic shock following a subsequent inoculum (shocking *d.*) of the same antigen (anaphylactogen). **shocking *d.*** in experimental anaphylaxis, the inoculum of antigen that causes anaphylactic shock in an animal

sensitized by a previous inoculum (sensitizing *d.*) of the same antigen. **skin *d.*** the absorbed dose of radiation delivered to the skin surface. **therapeutic *d.*** SYN: curative *d.* **tissue culture infectious *d.*** (**TCID₅₀**, **TCD₅₀**) the quantity of a cytopathogenic agent, such as a virus, that will produce a cytopathic effect in 50% of the cultures inoculated. **tolerance *d.*** the largest *d.* of a remedy that can be accepted without the production of injurious symptoms.

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